

# **MER Shift Reports**

**STS-107**

**Day 8 Shift 1**

AVIONICS  
FLIGHT CONTROL / GNC DAILY REPORT

01/23/03

STS-107  
Daily Report  
Flight Day 7

Flight controls and GNC systems are performing nominally.

Regarding MER - 7, there are six discrete jet driver measurements on the same MDM card. Some of these measurements also show a change in state (they toggle ON) at the same time as other measurements on the card. However, this data cannot be real because jet driver power is off at the time in question. Other driver measurements using other MDMs also show similar toggling which cannot be real due to lack of jet driver power.

Direct inquiries about the above to either Rick Kagawa (281 853-1578) or Don McCorvey (281 853-1689).

*Chris Gentz*  
*Jan. 23, 2003*



**TCS Thermal 1st Shift Report**  
**STS-107**  
**January 23, 2003 11AM (07/01:21 MET)**

The performance of orbiter thermal systems is nominal and all subsystem temperatures are operating within acceptable limits.

A handwritten signature in cursive script, reading "Dave Russell". The signature is written in black ink and is positioned above a horizontal line.

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Dave Russell / Andy Hong / Sam Thomas

**STS-107 ESD SYSTEMS SHIFT REPORT**  
**DAY 8 SHIFT 1**  
**GMT 023/17:00**

Energy Division Subsystems (MPS, RCS, OMS, FC/PRSD, APU, and Hydraulics) continue to function satisfactorily with the following notes or exceptions:

**FC/PRSD** – The fourth on-orbit fuel cell purge was performed at 022/23:44 GMT. During the 41.5 hour interval, the approximate performance decay was 0.14 vdc in fuel cell 1, 0.18 vdc in fuel cell 2, and 0.18 vdc in fuel cell 3.

The fuel cells 1 & 3 alternate water line temperatures continue to be erratic, indicating warm water leakage through the check valves.

Hydrogen tanks 4 & 5 were depleted at 023/01:05 GMT.

**OMS/RCS** – Currently in ROMS interconnect, A regs; switched back to A pod heaters at 022/20:52 GMT. Interconnect usage is currently at 2.265 %

Walter Scott  
ESD Team Lead

MER FLIGHT CREW EQUIPMENT- GFE/CFE  
STS-107 SHIFT REPORT

TO: MER MANAGER

SUBJECT: FD08; 2nd SHIFT REPORT

GMT: 023:17:00

**EVENTS:**

FCE monitored communications on the proper way to dispose of a used vacuum bag containing a little water during the 3<sup>rd</sup> shift of FD07. Final suggestions were the same as our own which were to place the vacuum bag in a Ziploc and dispose in the trash or put the vacuum bag in the wet trash.

**FORWARD ACTIONS:**

Monitor the water issue with the HUMSEP, which includes procedures for vacuum cleaner use. FCE is anticipating a CHIT to review on procedures.

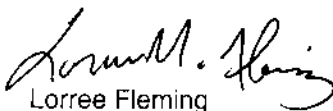
**CHITS (Monitoring / Working / Waiting for Closure):**

No new shuttle CHIT report that affects FCE hardware. Still waiting on CHIT for review of HUMSEP clean-up procedure.

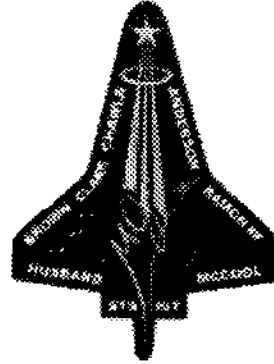
CHIT TI0431 ISS Leak Kit Sheet Metal Sizing is asking that 2 pieces of aluminum sheet metal be cut with tin snips to create a smaller piece for covering up a leak to vacuum on the ISS. CHIT refers to our hardware (clamp and bracket kit) and we will be added to the CHIT to ok procedures. Bum Jacinto is working this.

**HARDWARE STATUS:**

There have been no FCE anomalies recorded this reporting period. It is assumed all FCE is performing nominally.



Lorree Fleming  
Flight Crew Equipment- GFE/CFE



## DPS PASS FSW, MEDS & H/W MER Shift Report

STS-107

Date: 1/23/2003

GMT: 023/17:00:00

Shift: 1<sup>st</sup>

### SYSTEM STATUS / ISSUES BEING WORKED

- All DPS systems performing nominally.

DPS Team Lead: Burk Royer

Signature: Burk Royer

STS-107  
MER Comm and Track Shift Report  
GMT 23:13:00  
Shift 1

All comm and track systems are operating nominally.

*Jeff Stafford*

MER Comm & Track

STS-107 (OV-102 FLT 28)

1/23/03

8:30 AM

On-Orbit Shift Report

The HYD/WSB Systems are operating nominally and all parameters are within their expected ranges. There have been no additional circulation pump runs for thermal conditioning or bootstrap re-pressurization. The HYD/WSB group is not working any issues at this time.

**Total Circ Pump Runs**

<b>Thermal</b>	<b>Accumulator Recharges</b>
Sys 1: 1 for elevon Park	0
Sys 2: 0 runs	0
Sys 3: 0 runs	0

Jeffery S. Goza

HYD/WSB SSE



# **MER Shift Reports**

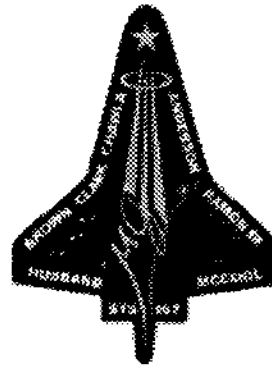
**STS-107**

**Day 8 Shift 2**

MER Shuttle Safety Console  
STS-107 FD 8 Shift 2  
GMT 024:01:00

The MER Safety Console is not working any safety of flight issues.

Rich Gardner



## DPS PASS FSW, MEDS & H/W MER Shift Report

STS-107

Date: 1/23/2003

GMT: 024/01:00:00

Shift: 2<sup>nd</sup>

### SYSTEM STATUS / ISSUES BEING WORKED

- All DPS systems performing nominally.

DPS Team Lead: Dan Cushman

Signature: 



**STS-107 MER Thermal 2<sup>nd</sup> Shift Report**

**024/01:00 GMT, 19:00 CST 01/23/2003**

All thermal systems are performing nominally and all temperatures are within acceptable limits.

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Lupe Gonzales/John Tran

**STS-107 ESD SYSTEMS SHIFT REPORT**  
**DAY 8 SHIFT 2**  
**GMT 024/00:00**

Energy Division Subsystems (MPS, RCS, OMS, FC/PRSD, APU, and Hydraulics) continue to function satisfactorily.

Chit STS0007 opened on the Water Separation Assembly problem. It calls for trying to increase the air flow from the Orbiter to the Spacehab from 50CFM to 100-150 CFM. ECLSS is working the Chit.

	Left		Right		Forward	
	Oxidizer	Fuel	Oxidizer	Fuel	Oxidizer	Fuel
PFS %	71.4	71.2	70.0	69.0	59.6	56.4
Interconnect Usage	0.000		2.349			

**ORBIT**

1. Left and Right Pod heaters were returned to the A-string (A-AUTO, B-OFF) at 022/20:52:40 GMT.
2. Left OMS GN2 Accumulator pressure is holding.
3. Right OMS propellant tanks were auto-re-pressurized at 023/22:19:31 GMT when the Right Fuel ullage pressure dropped below 236 psia. The helium isolation valve switches were in the following configuration:  
A - CL, B - GPC.

**Data Review**

1. OMS and RCS system data has been reviewed up through 023/22:00 GMT. System performance continues as expected with no anomalies noted.
2. All vernier jet firing through 023/15:30:00.000 GMT have been reviewed. There have been no anomalous pulses.

**RCS PRESSURIZATION LEG**

**FRCS: A**

**LRCS: A**

**RRCS: A**

**AFT RCS INTERCONNECT CONFIGURATION:** Right OMS Interconnect

23 of 38 primary thrusters have been fired. No new primary thrusters have been fired since the previous report:

F1F		L1A	X	R1A	X
F2F		L3A	X	R3A	X
F3F		L1L		R1R	
F1L		L2L		R2R	
F3L	X	L3L	X	R3R	X
F2R		L4L		R4R	

F4R	X	L1U	X	R1U	X
F1D	X	L2U		R2U	
F2D	X	L4U		R4U	
F3D	X	L2D	X	R2D	X
F4D	X	L3D	X	R3D	X
F1U	X	L4D	X	R4D	X
F2U	X				
F3U	X				

Chuck Beatty  
 ESD Team Lead

MER FLIGHT CREW EQUIPMENT- GFE/CFE  
STS-107 SHIFT REPORT

TO: MER MANAGER

SUBJECT: FD08; 3rd SHIFT REPORT

GMT: 024:01:00

**EVENTS:**

Blue team continuing with experiments (i.e. SOFBALL, etc.) Monitored video feeds of experiments as well as video tour of the SpaceHab Double Module. Red team now 30 minutes into sleep cycle.

Have not heard how used vacuum cleaner bag was finally stowed. FCE monitored communications (FD07-3<sup>rd</sup> shift) on proper disposal method of a used vacuum bag containing a little water. The final suggestions, with FCE's concurrence, were to place the vacuum bag in a Ziploc and dispose in the trash or put the vacuum bag in the wet trash.

**FORWARD ACTIONS:**

Monitor the water issue with the HUMSEP, which includes procedures for vacuum cleaner use. FCE is anticipating a CHIT to review on procedures.

**CHITS (Monitoring / Working / Waiting for Closure):**

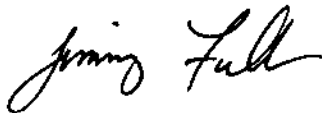
No new shuttle CHIT to report that affects FCE hardware. Still waiting on CHIT for review of HUMSEP clean-up procedure.

CE has responded to CHIT ISS0319 (formerly CHIT TI0431) - ISS Leak Kit Sheet Metal Sizing is asking that 2 pieces of aluminum sheet metal be cut with tin snips to create a smaller piece for covering up a leak to vacuum on the ISS. CHIT refers to our hardware (clamp and bracket kit) and we will be added to the CHIT to ok procedures. CHIT reviewed and FCE has given their concurrence

**HARDWARE STATUS:**

There have been no FCE anomalies recorded this reporting period. It is assumed all FCE is performing nominally.

Flight Crew Equipment- GFE/CFE



Jimmy Fuller

# ORBITER ECLSS

## STS-107 ECLSS SHIFT REPORT

### FLIGHT DAY 9

### SHIFT 2

All ECLSS systems performing nominally.

Regarding the IFM to increase flow to Spacehab, MER is investigating the impact that this will have on Orbiter cooling systems.

Consumables:	Supply water	508.8	lb.
	Waste water	90.7	lb.
	Orbiter Nitrogen	201.7	lb.

Shift Leader  
GMT 024/01:40



# STS-107

## OMS/RCS Day 8 Shift 2 Report

**INITIATOR:** Arrieta, Garza  
**DATE:** January 23, 2003

**MET:** 07/06:44  
**GMT:** 023/22:23  
**CENTRAL TIME:** 4:23 PM CST

	Left		Right		Forward	
	Oxidizer	Fuel	Oxidizer	Fuel	Oxidizer	Fuel
PFS %	71.4	71.2	70.0	69.0	59.6	56.4
Interconnect Usage	0.000		2.549			

### ORBIT

1. **Left and Right Pod heaters were returned to the A-string (A-AUTO, B-OFF)** at 022/20:52:40 GMT.
2. **Left OMS GN2 Accumulator pressure is holding.**
3. **Right OMS propellant tanks were auto-re-pressurized** at 023/22:19:31 GMT when the Right Fuel ullage pressure dropped below 236 psia. The helium isolation valve switches were in the following configuration: A - CL, B - GPC.

### Data Review

1. OMS and RCS system data has been reviewed up through 023/22:00 GMT. System performance continues as expected with no anomalies noted.
2. All vernier jet firing through 023/15:30:00.000 GMT have been reviewed. There have been no anomalous pulses.

**RCS PRESSURIZATION LEG    FRCS: A            LRCS: A            RRCS: A**

**AFT RCS INTERCONNECT CONFIGURATION:** Right OMS Interconnect

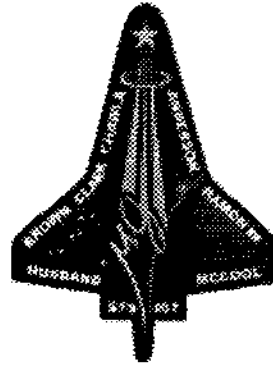
23 of 38 primary thrusters have been fired. No new primary thrusters have been fired since the previous report:

F1F		L1A	X	R1A	X
F2F		L3A	X	R3A	X
F3F		L1L		R1R	
F1L		L2L		R2R	
F3L	X	L3L	X	R3R	X
F2R		L4L		R4R	
F4R	X	L1U	X	R1U	X
F1D	X	L2U		R2U	
F2D	X	L4U		R4U	
F3D	X	L2D	X	R2D	X
F4D	X	L3D	X	R3D	X
F1U	X	L4D	X	R4D	X
F2U	X				
F3U	X				

# **MER Shift Reports**

**STS-107**

**Day 8 Shift 3**

**STS-107**

**GMT: 024/09:00:00**

- All DPS systems performing nominally.

**Signature:**

**MER FLIGHT CREW EQUIPMENT- GFE/CFE**  
**STS-107 SHIFT REPORT**

TO: MER MANAGER

SUBJECT: FD09; 1st SHIFT REPORT

GMT: 024:09:00

**EVENTS:**

Blue team continuing with experiments (i.e. SOFBALL, etc.) Monitored video feeds of experiments.

Red team now awake.

**FORWARD ACTIONS:**

Monitor the water issue with the HUMSEP, which includes procedures for vacuum cleaner use. FCE is anticipating a CHIT to review on procedures.

**CHITS (Monitoring / Working / Waiting for Closure):**

No new shuttle CHIT to report that affects FCE hardware. Still waiting on CHIT for review of HUMSEP clean-up procedure.

Also FCE is still watching CHIT ISS0319 until closure incase of any further question.

**HARDWARE STATUS:**

There have been no FCE anomalies recorded this reporting period. It is assumed all FCE is performing nominally.

Flight Crew Equipment- GFE/CFE

 1/24/03  
Christian Stevenson

# ORBITER ECLSS

## STS-107 ECLSS SHIFT REPORT

### FLIGHT DAY 9

### SHIFT 3

All ECLSS systems performing nominally.

#### Events:

MET 07/16:05      Terminated FES dump.

#### Issues:

MER is investigating impact that Spacehab IFM to increase air flow to Spacehab will have on Orbiter cooling systems.

Consumables:	Supply water	467.9 lb.
	Waste water	103.8 lb.
	Orbiter Nitrogen	201.1 lb.

Shift Leader  
GMT 024/09:02

MER Shuttle Safety Console  
STS-107 FD 8 Shift 3  
GMT 024:09:00

The MER Safety Console is not working any safety of flight issues.

Denise Londrigan

**STS-107 ESD SYSTEMS SHIFT REPORT**  
**DAY 8 SHIFT 3**  
**GMT 024/09:00**

Energy Division Subsystems (MPS, RCS, OMS, FC/PRSD, APU, and Hydraulics)  
continue to function satisfactorily.

Richard Phillips  
ESD Team Lead



## Thermal 3<sup>rd</sup> Shift Report

STS-107, January 24, 2003  
3 AM, MET 07/17:21 (24/09:00 GMT)

All temperatures are within acceptable limits and all thermal systems are operating nominally.

Attitudes for main landing gear tire thermal conditioning have not been incorporated into the timeline. The TCS recommendation included changes to the timeline from -ZLV -XVV to -ZLV+YVV for four periods: 11/02:30 MET for ~13 hrs, 12/00:15 for ~16 hrs, 12/22:40 for ~19 hrs and 13/23:15 for ~16 hrs. Also, the last 16 hrs prior to deorbit prep should include eight hours of bottom sun followed by -ZLV+YVV.

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Diana Coronado